EXHIBIT G

Declaration – Dr. Brian McAlary

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF ALABAMA

CAREY DALE GRAYSON,

Plaintiff,

v.

CASE NO. 2:24-cv-00376-RAH

JOHN Q. HAMM, Commissioner, Alabama Department of Corrections,

CAPITAL CASE
Execution Date Requested

TERRY RAYBON, Warden, Holman Correctional Facility,

ALABAMA DEPARTMENT OF CORRECTIONS, an Administrative Department of the State of Alabama,

STEVEN MARSHALL, Attorney General, State of Alabama, and

KAY IVEY, Governor, State of Alabama.

Defendants.

AFFIDAVIT OF DR. BRIAN MCALARY

I declare, under penalty of perjury, that the following is true and correct:

1. My name is Brian McAlary, M.D. I reside in Virginia. I am over the age of eighteen, fully capable and competent of making this Affidavit and have personal knowledge of the facts set forth herein.

2. I have been licensed to practice medicine since 1970. I am a Board-certified anesthesiologist. I received my medical degree from Harvard Medical School

in 1967. I did my residency in anesthesiology at the National Naval Medical Center in Bethesda, Maryland between 1968 and 1971. I currently practice as an anesthesiologist. I also currently serve as a clinical associate professor with the Edward Via College of Osteopathic Medicine. I have attached, as Exhibit A, my current curriculum vitae which details further my expertise, including professional licenses and memberships and publications.

3. I have been retained by the Federal Defender Program for the Middle District of Alabama to review the current nitrogen execution protocol (Protocol) employed by the Alabama Department of Corrections (ADOC)[1] and provide my medical opinion regarding the likelihood and level of pain to an individual being executed via the Protocol.

4. In my medical opinion, there is an almost certain risk of agony due to the conscious deprivation of oxygen that will occur under the Protocol. There are several serious concerns with the Protocol that create that high level of risk. I note at the outset that I have been unable to review an unredacted version of the Protocol. Thus, my statements and opinions are limited as to the unredacted version. I have also not been able to physically view the instruments involved in the process, which I believe would assist my understanding and allow me to make additional observations.

5. For purposes of clarity, I will provide my opinions and concerns related to the Protocol in the order they arise within the Protocol.

6. The failure to include a medical examination[2] in advance of the execution is problematic and raises serious concerns about adding physical pain and emotional duress to the process. Executing someone utilizing nitrogen requires that they breathe the nitrogen gas. If someone has an upper airway obstruction, the process will take longer, creating additional panic and fear and resulting in a painful process. Upper airway obstruction is an occlusion or narrowing of the airways leading to compromise in ventilation. Obstructive sleep apnea is the most common cause of

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[1] The version of the Protocol I reviewed is attached as Ex. B. It is dated as August 2023.

[2] Page 3 of the Protocol indicates a medical examination occurs when a prisoner is initially processed into ADOC custody, but that is not sufficient for whether conditions exist at the time of the execution. I am informed that a prisoner scheduled for execution has generally been in custody for significantly longer than one year.

chronic upper airway obstruction in adults, but there are other illnesses and acquired causes that can result in upper airway obstruction. A basic history and exam would alert a medical professional as to whether further examination is necessary to diagnose upper airway obstruction and determine its severity.

7. The Protocol fails to include any form of sedation prior to the start of the Protocol. This failure raises the risks of significant psychological pain. Some level of psychological pain is inherent in the process—as anyone facing certain death is likely to experience fear, anxiety, and panic. However, that panic under the current Protocol, which requires the inmate to breathe-in the manner of death, actually increases the psychological pain experienced by the inmate. As that base level of panic is likely to create the sensation of an inability to breathe, which will prolong the process and increase the psychological pain experienced. Sedation would alleviate that natural level of panic and decrease the likelihood of that increased psychological pain and suffering.

8. An additional concern regarding the failure to conduct a medical examination prior to the execution includes the failure to identify individuals with panic or anxiety disorders, and the failure to identify individuals with claustrophobia. These conditions risk the exacerbation of psychological pain under the current Protocol.

9. Sedation would also alleviate other risks inherent in the current Protocol—including the likelihood of the mask shifting and the shifting or displacement of monitors. These items shifting increase the likelihood of increased psychological or physical pain as noted below.

10. The Protocol notes that the "Warden or Assistant Warden shall inspect the condition of each gas cylinder and verify that the volume of gas in each bank. . . exceeds the minimum acceptable thresholds. . . ." (Protocol, p. 6, ¶ V. D. iv.) Based on the information available in the redacted version and the inability to view the actual set up, I am unable to say if the "minimum acceptable thresholds" determined by the ADOC are adequate. Even without being able to examine the set up, I have initial concerns. Section III of Appendix C to the Protocol notes:

The following are the minimum acceptable supply thresholds for each breathing gas required to perform a judicial execution by means of nitrogen hypoxia:

Breathing Air: **500 PSI (each bank)**

Nitrogen Gas: **500 PSI (each bank)**

The Warden shall monitor and maintain an awareness of the gas supplies present in all breathing gas banks.

[Security/DPI] [redacted]

In most cases, at 500 psi with a flow rate of 6 liters per minute, there would be 28 minutes of "breathable air." For individuals with upper airway obstruction, the flow rate should be modified, but there is no indication that this will be taken into consideration. Further, even if there is an intent to modify the flow rate, there is no indication within the Protocol that there are monitors gauging the flow rate and there are no indication of participants involved that are qualified to determine the appropriate flow rate, nor to conduct the appropriate monitoring. Alterations in the flow rate would impact the amount of "breathing air" available depending on the tank size and the amount of time a mask pushing "breathing air" is needed/used. A failure to take these factors into account would result in an individual running out of "breathing air" prior to the execution and would cause significant psychological pain as it would feel like suffocation. Further, there are other modifications that would assist in reducing psychological pain experienced by those with upper airway obstruction, including positional modifications. There is no indication those are considered under this Protocol.

11. The tank pressure alone does not necessarily allow predicting the quantity of compressed gas within the cylinder. In the case of N2O for example, the quantity of gas can decrease to a critical level while still showing a high pressure. The Protocol makes reference to a 70 L/min flow rate being delivered to the mask but does not indicate how the flow rate is being monitored, or if the volume of compressed nitrogen is sufficient to last for the defined and arbitrary 15-minute period. As discussed above with "breathing air," the same need for a change in flow

rate exists with individuals experiencing upper airway obstruction and could further complicate the monitoring of the level of nitrogen. The failure to monitor the flow rate raises the risk of insufficient amounts of nitrogen, which will raise the risk of hypoxic injury to the brain or heart instead of death.

12. Using medical or scientific professionals, rather than correctional officers who are likely not trained in medicine and science, to monitor the flow of nitrogen gas into the mask will significantly reduce the risk that the nitrogen gas flow rate is set incorrectly. If set too low, there is a significant risk that a prisoner's suffering will be prolonged, and they will experience the psychological pain of being unable to breathe for a longer time.

13. I also have concerns that the individuals charged with inspecting and monitoring this equipment have no medical or scientific training. Without such training, it is unclear how they could make such determinations. These determinations are essential to avoid an inadequate supply of nitrogen, which will result in hypoxic injury and not death. This is an unnecessarily painful and cruel risk.

14. I have similar concerns that responsibility for testing, inspecting, and monitoring the "nitrogen hypoxia system" and other devices is left to non-medically or -scientifically trained individuals.

15. The Protocol notes that the "Warden, Assistant Warden, or Execution Team Captain will retrieve the mask assembly, connect it to the breathing gas tubing, and stow it in the execution chamber at the designated location." (Protocol, p. 14, ¶ IX. I. vi.) This references "the mask assembly," and in prior testimony I reviewed in reaching my conclusions, there is reference to only a single-style "mask." There is a grave risk that use of only a single-style mask will result in an improper fit. The failure to use a properly fitted mask enables the entry of outside "breathing air" (including oxygen) into the mask, which will delay the onset of hypoxia, and prolong the suffering of the inmate. Further, considering the arbitrary time limits (see below) set by the protocol, the prolonging of the process could result in hypoxic injury without leading to death.

16. The Protocol requires "[t]he Warden or Assistant Warden [to] conduct a final visual inspection of the nitrogen hypoxia system and verify that it has been initialized/pressurized and that [REDACTED] lockout valves [REDACTED]." (Protocol, p. 15, ¶ X. A. i.) It further requires the Warden or Assistant Warden to

perform a similar action as to the "breathing gas tubing." (*Id.*) I note again my significant concern about non-medically or -scientifically trained individuals inspecting this equipment.

17. The Protocol references setting the "breathing air" (Protocol, p. 15, ¶X. A. ii.). Although much of that paragraph is redacted, I have significant concerns related to individuals with upper airway obstruction. As noted above, the "breathing air" setting should be different for individuals with upper airway obstruction. Otherwise, they risk suffering prior to the start of the execution due to inability to breathe properly.

18. The Protocol also notes that a "pulse oximeter will be placed and secured on the condemned inmate." (Protocol, p. 15, ¶X. A. iii.) It later notes that, after the mask is on the inmate's face, "the pulse oximeter will be monitored continuously for two minutes." (Protocol, p. 15, ¶X. A. vi.) Neither paragraph references who will perform these actions or their training or qualifications. This raises concerns about ensuring this action will be performed. The failure to have someone with scientific or medical training raises the danger of such monitoring equipment not being secured properly. In addition, the referenced two-minute interval is arbitrary, and does not allow for significant individual variation. Nor does it specify what threshold of hemoglobin oxygen saturation is being targeted as sufficient. Further, there is no indication that the pulse oximeter was calibrated to ensure accuracy prior to its use.

19. Paragraph X. A. v., of the Protocol notes, "The mask will be placed and adjusted on the condemned inmate's face" and provides that the "Execution Team Captain verifies that the mask has been properly placed." There is no reference as to who is responsible for placing the mask on the individual or their training or qualifications. Further, there is no definition of "properly placed." I have referenced above my concerns about the failure to have masks of various sizes and follow proper fit guidelines. There are specific procedures and protocols in properly fitting a mask. There is no indication in this Protocol that any such procedures will take place. Again, the failure to have someone with medical or scientific training perform these tasks is a significant concern that increases the risk of unnecessary psychological pain and suffering, including hypoxic injury without death.

20. The Protocol includes time-based criterion, including requiring that nitrogen be given to the inmate through a mask for 15 minutes or until 5 minutes

after the prisoner shows a flat line on an EKG, whichever is longer. The medical definition of death is not based on the duration of a hypoxic insult. There is no factual or medical basis for picking an arbitrary time on the clock to determine death. This invites the risk of causing significant brain and heart injury without death.

21. Paragraph X. A. xv. contains the first mention of an EKG. Unlike the pulse oximeter, there is no reference to when it will be placed on the inmate, or if it will be observed/checked prior to the start of the execution. Nor does it identify anyone as responsible for those tasks who is qualified to interpret these EKG patterns or recognize artifacts due to faulty electrode contact.

22. The Protocol does not indicate the training levels, if any, of the individuals required to confirm a flatline indication on the EKG. The Protocol does not provide for monitoring the accuracy of this equipment as the execution progresses. This is problematic because EKG machines also have artifacts that could provide false readings during an execution. Further, pulse oximeters may become dislodged during the process and create false readings indicating that the prisoner is dead when they are still alive. Because of the arbitrary time limit placed on the administration of nitrogen in the Protocol, errors in one or both pieces of that equipment could lead to stopping the flow of nitrogen while the prisoner is still alive but having sustained hypoxic brain or heart injury without death. The failure to provide safeguards related to the equipment monitoring the inmate's life creates a substantial risk of hypoxia induced injury during a nitrogen execution, which would require the need for long-term medical and nursing care.

23. In paragraph I. D. vi., the Protocol notes, "It is likely that the manufacturers of these products do not know that their publicly available products were procured by ADOC." While I can understand some of ADOC's reasoning for keeping this information secure, there is an inherent danger in purchasing products off the shelf and using them in a manner not intended by the manufacturer. Manufacturers routinely warn against this very thing, and they do so for a reason. The use of a mask, breathing gas, and nitrogen should be guided by individuals with medical or scientific training. The failure to have professional guidance regarding the materials being used raises significant risks as outlined above. The inability to rely on the advice, experience, and testing of the manufacturer of the products raises these risks significantly.

24. Appendix C to the Protocol sets out further guidance as to the set up and testing of the system. Section II, ¶ 31 includes:

> [redacted] enter the execution chamber to verify that the portable O_2 meter shows that breathing air is being supplied to the mask. Meter readings should be observed for at least 60 seconds with readings remaining higher than 20% oxygen.

Again, there are concerns with the failure to properly calibrate monitors and tank levels that can create additional psychological suffering for the inmate.

25. The opinions expressed herein are to a medical certainty, unless otherwise noted. As noted above, my opinion is limited because of redactions and not having viewed the instruments and setting. Even with those limitations, I have grave concerns that the Protocol creates significant risks of significant psychological pain, prolonged suffering, and/or potential hypoxic injury rather than death.

26. I reserve the right to modify my opinions following review of the unredacted Protocol and after viewing the instruments and setting.

Date: July 23, 2024

Respectfully submitted,

Brian G. McAlary MD

Dr. Brian McAlary, M.D.

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CAREY DALE GRAYSON,

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JOHN Q. HAMM, Commissioner, Alabama Department of Corrections,

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STEVEN MARSHALL, Attorney General, State of Alabama, and

KAY IVEY, Governor, State of Alabama.

Defendants.

CASE NO. 2:24-cv-00376-RAH

CAPITAL CASE
Execution Set for
November 21-22, 2024

ADDENDUM TO AFFIDAVIT OF DR. BRIAN MCALARY

I declare, under penalty of perjury, that the following is true and correct:

I provide this addendum to my earlier report (titled Affidavit of Dr. Brian McAlary) to add the following:

1. I am being compensated at a rate of $400 per hour for all work on this case.

2. I do not keep track of the cases in which I testify or am deposed.

3. I have not provided testimony, through trial or deposition, in federal court.

4. I have never testified in a case concerning methods of execution.

5. My expert practice is focused on medical malpractice, care practice, and other traditionally civil matters.

6. I have never been censured.

7. I have never been rejected when tendered as an expert witness.

Date: October 4, 2024

Respectfully submitted,

Dr. Brian McAlary, M.D.